Stereoscopic Studies
of
ANATOMY

Prepared under authority of the
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Section VII

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Stereoscopic Studies of Anatomy

Section VII

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ABDOMEN.

PELVIS—No. 1.

PELVIC BRIM AND CAVITY, VIEWED FROM ABOVE AND IN FRONT.

The pelvic peritoneal cavity in the female is divided into an anterior and posterior compartment by the uterus and a transverse fold of peritoneum which runs outwards from it on either side to the side wall of the pelvis, called the *broad ligament*. The ovary lies on the posterior aspect of this fold and is concealed from view.

The posterior compartment or *recto-vaginal pouch*, or pouch of Douglas, is limited laterally by a fold of peritoneum which passes from the side of the uterus to the sacrum, called the *utero-sacral fold*. The uterus is, in this specimen, somewhat retroverted, and the loops of the pelvic colon fill the left part of the pouch of Douglas. In front of the uterus is the *utero-vesical* pouch of peritoneum.

On either side of the promontory of the sacrum are seen the common iliac vessels, and crossing them, the ureters and the ovarian vessels, and on the left side, the terminal portion of the inferior mesenteric artery. Still further out, is the psoas muscle, and, in this case, there is a psoas parvus muscle lying in front of it.

The figures indicate—

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2. Utero-sacral ligament.
3. Fundus of the uterus.
4. Pelvic colon.
5. Round ligament of the uterus.
6. Bladder beneath the peritoneum.
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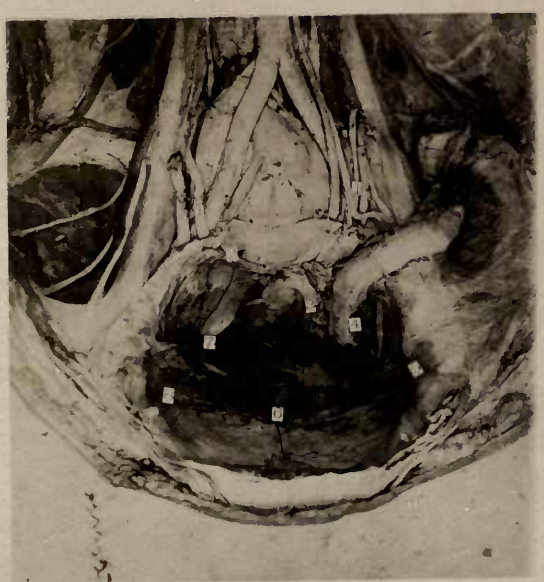


ABDOMEN PELVIS. No. 1.
SECTION VII.

ABDOMEN.

PELVIS.—No. 2 (Male).

VERTICAL MESIAL SAGITTAL SECTION THROUGH THE MALE PELVIS, TO SHOW THE VISCERA AND THE PERITONEUM.

The peritoneum covering the superior surface of the bladder is continued forwards on to the anterior abdominal wall. In a backward direction it leaves the bladder, passes over the apex of the seminal vesicles and the vasa deferentia, and thence on to the front of the rectum, which it reaches about an inch above the base of the prostate gland. Laterally, the peritoneum passes on to the side wall of the pelvis. When the bladder and rectum are empty, it is raised into two folds. One of these passes as a sharp crescentic margin from the base of the seminal vesicles and the vas deferens outwards and backwards towards the sacrum, and is called the *sacro-genital* fold. It contains some fibrous and muscular tissue. In front of this, a fold is raised up by the ureter.

These folds divide the lateral pelvic peritoneal cavity into three fossae. By the side of the rectum is the *para-rectal fossa*, limited in front by the sacrogenital fold. In front of it is a middle or *genital fossa* extending forwards to the fold of the ureter, and in front of it again, by the side of the bladder, is the *para-vesical fossa*. The fold of the ureter is crossed by a ridge due to the vas deferens which lies below the peritoneum, and crosses the ureter.

The *recto-vesical* peritoneal pouch is limited below by the peritoneum between the bladder and front of the rectum.

The figures indicate—

1. Fourth lumbar intervertebral disc.
2. Pubic symphisis.
3. Apex of the bladder.
4. Termination of the rectum, and commencement of the anal canal.
5. Prostate gland, and, behind it, the seminal vesicles.
6. Peritoneal fold due to the ureter, crossed here by the vas deferens.
7. Sacro-genital fold of peritoneum.
8. Bulb of the penis.

ABDOMEN PELVIS (MALE) No 2
SECTION VII.

ABDOMEN.

PELVIS—No. 3.

VERTICAL MESIAL SECTION OF THE MALE PELVIS, TO SHOW ESPECIALLY THE VISCERA.

The pelvic colon has been left undivided, in order to show its whole extent.

The *pelvic colon* is a loop of intestine, about 15-18 inches in length, attached by a peritoneal mesentery to the wall of the pelvis, from the inner border of the left psoas muscle to the third piece of the sacrum. The length of the mesentery permits considerable alterations to take place in the disposition of the loop, but it may be said that usually it first passes into the true pelvis, it then crosses the pelvic cavity from left to right, and then bends back to the middle line and becomes continuous with the rectum.

The *rectum* begins at the level of the third piece of the sacrum, and extends forwards on the front of the sacrum, coccyx, and ano-coccygeal body, adapting itself to the curve of these structures. It is usually curved from side to side, at the points of the flexures of the rectum, which are usually three in number.

It terminates about 1½ inches in front of the tip of the coccyx, where it bends downwards and back, to form the anal canal.

The *anal canal* is the short passage through the floor of the pelvis, surrounded by the external and internal sphincter muscles, and the two levatores ani. These structures form the lateral relations of the canal, and beyond them is the ischio-rectal fossa on each side. In front are the bulb of the urethra and the base of the triangular ligament, and behind, the ano-coccygeal body.

The relations of the peritoneum to the different parts of the intestine are well seen, the upper two-thirds of the rectum having a partial investment, and the lower third being destitute of it.

The figures indicate—

1. Disc between the fourth and fifth lumbar vertebræ.
2. Symphisis pubis.
3. Pelvic colon.
4. Termination of the pelvic colon.
5. Rectum.
6. Anal canal.
7. Bladder.
8. Prostate.
9. Bulb of the urethra.

ABDOMEN.

PELVIS.—No. 4.

VERTICAL SAGITTAL SECTION OF THE MALE PELVIS SLIGHTLY TO THE LEFT OF THE MESIAL PLANE.

The peritoneum has been removed to show the vessels and nerves.

The bladder is moderately distended, and occupies the anterior half of the pelvic cavity, the apex rising up behind the symphisis pubis. A large area of the posterior or basal aspect lies in front of the rectum, the seminal vesicles intervening in the lower part. The prostate lies fixed in its sheath of fascia, and the portion of bladder wall associated with it does not change its position.

The *rectum* is distended, and is seen to receive branches of supply from the inferior mesenteric artery. The principal vessels and nerves lie on the side wall of the pelvis at a somewhat higher level than those organs, and therefore are not liable to pressure, except when the viscera are considerably over-distended.

The course of the vessels and other structures is seen in the next view.

The figures indicate—

1. Intervertebral disc above the sacrum.
2. Symphisis pubis.
3. Bifurcation of the common iliac artery.
4. Division of the internal iliac artery.
5. External iliac vein, the artery lying on its outer side.
6. Ureter entering the pelvis.
7. Terminal branch of the inferior mesenteric artery.
8. Anterior division of the first sacral nerve.
9. Obturator nerve.
10. Vas deferens entering the pelvis.
11. Prostate.
12. Rectum.

ABDOMEN.

PELVIS.—No. 5.

(SAME AS NUMBER 4, AFTER REMOVAL OF THE RECTUM AND OF THE LATERAL PART OF THE BLADDER WALL) TO SHOW THE NERVES AND VESSELS AND THE COURSE OF THE URETER AND VAS DEFERENS.

The *ureter* enters the pelvis, crossing in front of the common iliac, or, as here, the external iliac vessels. It then passes downwards and slightly forwards to the base of the bladder, lying in front of the internal iliac artery and crossing the obturator vessels and nerve, and the obliterated hypogastric artery. It is crossed by the vas deferens, and ends by piercing the bladder wall very obliquely. The *vas deferens* pursues a curved course, first crossing the external lilac vessels, and then passing down and back by the side of the bladder, crossing the obliterated hypogastric artery, and then the ureter. It then turns inwards, and lies on the inner side of the seminal vesicle, and passes to the base of the prostate.

Behind the ureter lies the *internal iliac artery*, which divides into an anterior and a posterior division, and from them branches are seen passing in different directions.

The figures indicate—

1. Promontory of the sacrum.
2. Symphisis pubis.
3. Between common iliac artery and vein.
4. Division of common iliac artery.
5. Ureter crossing the external iliac vein.
6. Gangliated cord of the sympathetic.
7. First sacral nerve.
8. Obturator nerve.
9. Obliterated hypogastric artery.
10. Prostate.

ABDOMEN PELVIS No. 5.
SECTION VII.

ABDOMEN.

PELVIS—No. 6.

SIDE WALL OF THE PELVIS.

Running along the side wall of the pelvis is seen the *white line* or *arcus tendineus*, from which the levator ani takes origin, and which extends from the back of the symphisis pubis to the spine of the ischium. Above this level, the pelvis is lined by the obturator internus muscle, and at its upper margin is the notch by which the obturator vessels and nerve escape from the pelvic cavity. In this case there is an abnormal obturator artery, arising from the deep epigastric artery, and accompanied by a vein which joins the internal iliac vein. There is only a very small obturator branch from the internal iliac artery.

Below the white line, is the *pelvic diaphragm*, composed of the levator ani and coccygeus muscle on each side of the body. On the front of the sacrum lies the *pyriformis* muscle, with the anterior sacral nerves, from which some branches pass forwards to supply the levator ani muscle on its pelvic aspect.

The figures indicate—

1. Aperture for the urethra.
2. Anal canal.
3. Levator ani muscle.
4. Arcus tendineus of the levator ani, or white line of the pelvic fascia.
5. Obturator internus muscle.
6. Ischial spine.
7. Pyriformis muscle.
8. Coccygeus muscle.
9. External sphincter muscle.
10. Obturator canal, for vessels and nerves.
11. Aperture for ilio-lumbar vessels.
12. Anterior sacral nerves.
13. Bulb of the penis.

ABDOMEN.

PELVIS—No. 7.

CORONAL SECTION OF THE PELVIS, WITH THE BLADDER AND PROSTATE IN SITU.

Lining the side wall of the bony pelvis is seen the *obturator internus muscle* on the left side, with fascia on its inner and outer aspects. The fascia on its pelvic aspect gives origin to the *levator ani* muscle, and the anterior strong pillars of that muscle are seen supporting the prostate gland and passing on to blend with the wall of the anal canal. External to this muscle, on the right side of the specimen, is seen the apex of the *ischio-rectal fossa*, with the internal pudic nerve and vessels lying in its outer wall.

The *prostate* rests on the end of the rectum, and the groove between its base and the neck of the bladder was occupied by a plexus of veins and by fibrous tissue. The anal canal passes downwards and backwards from the prostate.

The vessels, nerves, and ureter lying on the side wall of the pelvis, and the vessels and nerves on the pelvic brim should be noticed.

The figures indicate—

1. Anterior portion of the levator ani.
2. Obturator internus muscle.
3. External sphincter of the anal canal.
4. Prostate, with the urethra emerging from it.
5. Seminal vesicle.
6. Fascia covering obturator internus.
7. Apex of ischio-rectal fossa, with internal pudic vessels and nerves.
8. Pelvic colon.
9. Urachus.
10. Obturator vessels and nerve.
11. Ureter.
12. External iliac vessels and genito-crural nerve.
13. Terminal part of the ileum, with the appendix vermiformis lying external and posterior to it.
14. Below the anterior crural nerve.

ABDOMEN.

PELVIS—No. 8.

SAME AS NO. 7, AFTER REMOVAL OF THE BLADDER AND PROSTATE. AND OF THE ANTERIOR WALL OF THE ANAL CANAL.

I. *Anal Canal.* In the wall of the anal canal are seen (1) the *internal sphincter*, formed by a thickening of the circular muscle fibres of the intestine, (2) the *fibres of the levator ani*, and (3) externally, the *external sphincter*. In the interior can be seen one of the vertical folds of mucous membrane, or columns of Morgagni.

II. *Rectum.* The lateral flexions of the rectum are seen, they are usually three in number, two to left and one to the right, and at these bends a fold of mucous membrane projects into the interior of the canal, forming a rectal valve.

On each side of the rectum at the back is the para-rectal peritoneal fossa, and the peritoneum as it passes forwards on the rectum is seen to pass off first from the lateral and then from the anterior surface.

The figures indicate—

1. Levator ani muscle.
2. Obturator internus.
3. Internal sphincter.
4. Column of Morgagni in the anal canal.
5. Flexure of the rectum to the right.
6. 7. Apex of the ischio-rectal fossa, with internal pudic vessels and nerve, and a branch from the nerve to the levator ani.
8. Pelvic colon.
9. Pelvic vessels and nerves.
10. Obturator vessels and nerves.
11. Ureter.
12. External iliac vessels and genito-crural nerve.
13. Termination of the ileum.
14. Below the anterior crural nerve.
15. Commencement of the rectum.

ABDOMEN PELVIS No. 8.
SECTION VII.

ABDOMEN.

PELVIS—No. 9.

RECTUM VIEWED FROM BEHIND.

The sacrum has been sawn across through the middle of its third piece, and the lower part removed, with the coccyx, after dividing the sacro-sciatic ligaments.

A portion of the levator ani muscle has been removed, and the fat and lymphatic glands, etc., behind the rectum taken away. The sheath of the left seminal vesicle has been opened.

The rectum begins where the mesentery of the pelvic colon ends, usually at the third piece of the sacrum. It passes along the hollow of the sacrum and coccyx forwards as far as to the back of the prostate, and then alters its direction and passes backwards as the anal canal.

In its course it presents some distinct flexures, of which two are seen in this view.

The pelvic peritoneum invests it for some distance on either side and in front, and the two fossæ or pockets on either side, the para-rectal fossæ, are well seen.

Immediately below the level of the peritoneum the bases of the seminal vesicles project backwards, and are in close contact with the sides of the rectum. Their relationship to the apex of the ischio-rectal fossa should be noticed.

The dilated terminal portion of the rectum is known as the rectal ampulla.

The longitudinal muscular fibres form a strong band on this aspect and on the front of the rectum. Each band is made up of separate fasciculi between which the blood vessels, which are very numerous, enter and leave the wall.

Pelvic fascia.—The fascia upon the pelvic aspect of the levator ani and coccygeus muscles is very strong in this region, and helps to support the rectum, forming a tubular sheath for the intestine where it passes through the pelvic diaphragm. This is termed the rectal fascia.

The fascia further forward encloses the seminal vesicles, forming a sheath for them, and in this part is called the recto-vesical fascia.

The figures indicate—

1. Peritoneum.
2. Superior hæmorrhoidal vessels.
3. Seminal vesicle.
4. Lower flexure of rectum.
5. Rectal fascia.
6. Levator ani muscle.
7. Sphincter ani externus.
8. Pyriformis muscle.
9. Second sacral nerve.
10. Upper flexure of rectum.
11. Ischio-rectal fossa.

MALE PELVIS. No. 9.

SECTION VII.

ABDOMEN.

PELVIS—No. 10.

THE SAME DISSECTION HAS BEEN CARRIED OUT AS IN NO. 9, AND A VIEW HAS BEEN TAKEN TO SHOW THE RECTUM AND PERITONEUM IN RELATION TO THE SACRUM AND COCCYX.

The reflection of peritoneum from the front of the rectum is seen to take place at the level of the lower end of the sacrum, and this is also the lowest limit of the pararectal fossæ.

The left fossa passes somewhat lower down than does the right, but this condition appears to be variable.

This view is intended to show the area which is available for surgical operations for the removal of the rectum by the sacral route, but the amount of the sacrum which can be taken away is strictly limited by the presence of the important sacral nerves.

The letter C indicates the first piece of the coccyx, the large 2 the posterior inferior spine of the ilium, the large 3, 4, and 5 indicate corresponding pieces of the sacrum.

The other small figures indicate:—

1. Reflection of peritoneum.
2. Superior hæmorrhoidal artery.
3. Seminal vesicle, left side.
4. Lower flexure of the rectum.
5. Rectal fascia.
6. Levator ani.
7. Sphincter ani externus.
8. Pyriformis.
9. Second sacral nerve.
10. Upper lateral flexure of rectum.
11. Ischio-rectal fossa.
12. Fascia investing seminal vesicle.
13. Right seminal vesicle.

MALE PELVIS. No. 10.
SECTION VII.

ABDOMEN.

MALE PELVIS.—No. 11.

IN ADDITION TO THE DISSECTION IN NO. 9, A PORTION OF THE RECTUM HAS BEEN REMOVED TO SHOW ITS ANTERIOR RELATIONS.

In front of the rectum lie the peritoneum in the upper part, and in the lower the recto-vesical fascia separating the rectum from the back of the bladder and prostate.

On this surface of the peritoneum can be seen a whitish area, gradually diminishing in size as it passes down, where the rectum was in contact with the peritoneal membrane.

The recto-vesical fascia is a part of the visceral pelvic fascia which encloses the seminal vesicles on each side, and passes across from one side to the other between the bladder and the rectum, forming a partition between them.

The sheath of the seminal vesicle of the left side has been opened, to show the way in which the fascia is arranged in relation to it.

The rectal fascia is a fairly strong layer of visceral pelvic fascia, which invests the lower portion of the rectum as it passes down between the levator ani muscles. It is continuous with the recto-vesical layer along the side wall of the pelvis.

The upper limit of the recto-vesical fascia and the termination of the contact of peritoneum and rectum are seen to be at the level of the spine of the ischium.

The figures indicate—

1. Sphincter ani.
2. Rectal fascia.
3. Rectum, lower end.
4. Recto-vesical fascia.
5. Peritoneum, area in contact with rectum.
6. Left seminal vesicle.
7. Rectum, upper end.
8. Parietal pelvic fascia, and origin of levator ani.
9. Great sacro-sciatic ligament.
10. Spine of ischium.
11. Third piece of sacrum, divided,

ABDOMEN.

MALE PELVIS—No. 12.

IN ADDITION TO THE PREVIOUS DISSECTION, THE LOWER PART OF THE RECTUM AND THE ANAL CANAL HAVE BEEN SHELLED OUT FROM THE LEVATOR ANI MUSCLES, AND THE RECTAL FASCIA AND THE GREATER PART OF THE RECTO-VESICAL FASCIA HAVE BEEN REMOVED.

The dissection now shows, below the level of the peritoneum, the back of the bladder, the vasa deferentia and seminal vesicles, and the back of the prostate, while below the prostate is a small interval between the anterior margins of the levator ani muscles which is filled in by the deep layer of the triangular ligament. External to the levator ani muscle on each side is the apex of the ischio-rectal fossa, and it will be noticed that the seminal vesicles lie immediately above the apex of this fossa.

The cut margin of the recto-vesical fascia has been left in position above, below, and at the sides, in order to show its extent and attachments.

The figures indicate—

1. Rectum.
2. Peritoneum.
3. Recto-vesical fascia investing the seminal vesicles, divided.
4. Seminal vesicle.
5. Vas deferens.
6. Prostate.
7. Levator ani muscle.
8. Sphincter externus.
9. Anterior margins of levator ani.
10. Bladder.

MALE PELVIS. No. 12.

SECTION VII.

PELVIS.

FEMALE PELVIS.—No. 1.

The rectum has been exposed from behind, by removal of the superficial structures and of portions of the levator ani and coccygeus muscles, and a view has been taken to show the lower part of the sacrum and the coccyx in relation to it. The sacrum has been divided through the fourth piece.

This view should be compared with the corresponding view of the male pelvis (No. 10).

The principal differences between the two views arise from the much greater width between the ischial tuberosities in the female, so that there is considerably greater room for access surgically.

The peritoneum on each side, where it forms the posterior wall of the pouch of Douglas, is somewhat nodular, but its relation to the rectum is the same as in the male. In front it passes on to the posterior wall of the vagina.

In this specimen, as in the other, the rectum is empty, and the lateral flexures are not very large, but the angle between the anal canal and the lower end of the rectum is well brought out.

S and C indicate the lower part of sacrum, and the upper part of coccyx respectively.

The figures indicate—

1. Rectum.
2. Anus.
3. Levator ani.
4. Peritoneum.
5. Great sacro-sciatic ligament.
6. Superior hæmorrhoidal vessels.
7. Ureter.
8. Sacral nerve.
9. Rectal fascia.

The sacrum has been sawn across through the fourth piece.

FEMALE PELVIS. No. 1
SECTION VII.

PELVIS.

FEMALE PELVIS—No. 2.

IN ADDITION TO THE PREVIOUS DISSECTION, THE RECTUM HAS BEEN DIVIDED ABOUT ITS MIDDLE, AND THE LOWER PART REMOVED WITH THE ANAL CANAL, THE LATTER HAVING BEEN SHELLED OUT FROM THE LEVATORES ANI MUSCLES.

The peritoneum should be observed, and especially its reflection in the middle on to the posterior wall of the vagina.

Between the rectum and the vagina is a large venous plexus, which is most distinct at the sides, and the mesial plane is comparatively avascular.

There is no fold immediately in front of the rectum comparable to the recto-vesical septum of fascia, which is so distinct in the male.

The ureter lies at some distance, and is shown in a small part of its course on the right side.

The large vessels—internal pudic and sciatic—emerging through the great sacro-sciatic foramen are well seen on the left side.

The bone has been divided through the fourth piece of the sacrum—a level higher than can be done with safety in surgical operations, but it is not essential to go so high up in order to obtain good access to the rectum.

The figures indicate—

1. Posterior wall of vagina.
2. Vaginal venous plexus.
3. Levator ani.
4. Peritoneal reflection on to posterior vaginal wall.
5. Great sacro-sciatic ligament.
6. Superior hæmorrhoidal vessels.
7. Ureter.
8. Third sacral nerve.
9. Rectal fascia.
10. External sphincter.
11. Rectum divided.

SECTION VII. FEMALE PELVIS. No. 2

PELVIS.

FEMALE PELVIS—No. 3.

THE ANTERIOR WALL OF THE PELVIS HAS BEEN REMOVED, AND THE PERITONEUM HAS BEEN DIVIDED AT THE ROOT OF THE BROAD LIGAMENT, AND REMOVED FROM THE BLADDER.

The urethra has been dissected out of the anterior vaginal wall.

1. Bladder.—The bladder in the female is of practically the same shape as in the male, and presents the same relations to the wall of the pelvis and to the peritoneum.

Posteriorly, it rests against the front of the vagina and lower part of the uterus. It is connected to them by a small amount of areolar tissue which can be easily divided when normal, allowing the uterus to be separated from the bladder.

The close apposition of this aspect of the bladder to the vagina may lead to the formation of a vesico-vaginal fistula after injury to the anterior vaginal wall.

2. Urethra.—In the female, the urethra measures about 1½ inches in length, and is nearly straight in its direction from the neck of the bladder to the external orifice. It lies for a great part of its course embedded in the anterior wall of the vagina, but at the upper part it is surrounded by a large amount of highly vascular connective tissue, in which some glands are situated which open into the urethra.

3. Uterus.—This organ in this specimen lies somewhat backwards and to the left side. A mesial position is somewhat rare in a parous female, but the deviation is more commonly to the right side.

The folds of peritoneum which invest it pass outwards on either side as the broad ligament, and the peritoneum does not completely cover the anterior surface of the uterus, as a small portion is left uncovered where the peritoneum passes off it in front on to the upper surface of the bladder.

On each side of this portion of the uterus is a very large plexus of veins, and external to this, the ureters pass forwards, and then converge inwards to the posterior angles of the bladder.

It is in this position that the ureters are liable to be damaged or included in ligatures in vaginal hysterectomy.

The figures indicate—

1. Meatus urinarius.
2. Vaginal wall.
3. Vaginal venous plexus.
4. Levator ani muscle.
5. Pelvic fascia.
6. Obturator internus.
7. Upper surface of bladder.
8. Reflection of peritoneum from uterus.
9. Broad ligament.
10. Fallopian tube, overlying ovary.
11. Body of uterus.
12. Left Fallopian tube.
13. Round ligament.
14. Ureter (left).
15. Pelvic colon.
16. Rectum (commencement of).

FEMALE PELVIS. No. 3.
SECTION VII.

PELVIS.

FEMALE PELVIS.—No. 4.

IN ADDITION TO THE PREVIOUS DISSECTION, THE URETERS HAVE BEEN DIVIDED, AND THE BLADDER REMOVED. THE ANTERIOR WALL OF THE VAGINA HAS BEEN DIVIDED AT ITS ATTACHMENT TO THE UTERINE CERVIX, AND AT THE SIDE, AND REMOVED.

The vagina is about three inches long, and forms a canal which leads from the uterus to the surface. It is in the form of a transverse slit, the anterior and posterior walls being in contact, and on transverse section in some cases it appears to be H-shaped. The cervix of the uterus is, as it were, invaginated into its upper end, so that a hollow runs round the cervix, and this hollow in different regions forms the fornices. As the axis of the uterus does not correspond with that of the vagina, but is more vertical, and the anterior wall of the vagina is shorter than the posterior, the anterior fornix is very shallow, and the posterior is deep, while the lateral fornices are intermediate.

The lateral aspect of the vagina in nearly its whole length is enclosed in a large mass of very highly vascular tissue, forming a large venous plexus on either side.

The long axis of the vagina is almost parallel with that of the pelvic brim.

The figures indicate—

1. Posterior vaginal wall.
2. Cut margin of wall.
3. Vaginal venous plexus.
4. Cervix uteri.
5. Attachment of vagina to uterus.
6. Ureters.
7. Uterine venous plexus.
8. Peritoneum.

FEMALE PELVIS. No. 4.
SECTION VII.

ABDOMEN.

FEMALE PELVIS—No. 5.

THE UTERINE ARTERY HAS BEEN TRACED IN ITS COURSE ALONG THE BASE OF THE BROAD LIGAMENT, AND, ON THE LEFT SIDE, SEVERAL STRUCTURES WHICH ARE FOUND IN THE BROAD LIGAMENT HAVE BEEN DISSECTED OUT.

The broad ligament is a double fold of peritoneum which passes from the uterus to the side wall of the pelvis, and which contains the Fallopian tube, the ovary, and vessels, nerves, ligaments, and some vestigial structures.

1. The Fallopian tube begins at the ovary in a wide funnel-shaped portion, with fimbriated edges, which are in close relation to the ovary. From this region the tube runs in a somewhat tortuous manner along the upper margin of the broad ligament, and enters the upper lateral angle of the uterus.

2. The ovary lies in a recess in the side wall of the pelvis, and it is somewhat oval in shape, the long axis being nearly vertical. Those organs are rarely symmetrical in position, and, in this specimen, the right ovary was displaced downwards through the displacement of the uterus to the left side. The ovary lies in the posterior fold of the broad ligament, and consequently is not seen from the front until the peritoneum forming that ligament has been removed (as on the left side).

3. The round ligament of the uterus is a rounded band of muscular and connective tissue which passes from the margin of the uterus, below the entrance of the Fallopian tube, outwards to the side wall of the pelvis, and in the latter part of its course it passes into the inguinal canal and resembles the vas deferens in its relations.

The vessels contained in the broad ligament include the uterine and ovarian arteries and veins. The veins form a large plexus round the margin of the uterus from which blood passes by the uterine vein to the internal iliac vein, and also a plexus near the ovary, from which two ovarian veins pass, with the ovarian artery, and end in the same way as the spermatic veins in the male, *i.e.* in the inferior vena cava on the right side, and in the left renal vein on the left.

The vestigial structures comprise the paroöphoron and the epoöphoron which represent the paradidymis and epididymis of the male. This view also illustrates the external characters of the uterus and its principal parts, viz., the fundus or upper rounded end, the body which diminishes in size as it passes down, and which is separated by a constriction, the isthmus, from the cervix, which is rounded and cylindrical in character, and passes into the upper part of the vagina.

The figures indicate—

1. Cervix uteri.
2. Fundus uteri.
3. Uterine artery.
4. Ureter.
5. Uterine vein.
6. Round ligament.
7. Ovarian veins.
8. Fallopian tube.
9. Ovarian venous plexus.
10. Ovary.
11. Rectum.
12. Venous plexus round cervix.
13. Vaginal branch of uterine artery.

FEMALE PELVIS. No. 5.

SECTION VII.

LOWER LIMB.

SURFACE ANATOMY—No. 1.

FRONT OF THIGH.

With this view Scarpa's triangle No 2. should be compared.

1. Bony points.—The anterior superior spine of the ilium lies at the bottom of a slight depression, and marks the junction between the abdominal wall and the thigh. The crest of the ilium passes upwards and outwards from it, forming a sinuous depressed line, and Poupart's ligament passes downwards and inwards. These lines form the upper limit of the thigh and the lower limb of the abdomen.

The great trochanter also lies in a depressed area in the outer side of the thigh—the figure 8 is placed in front of it, at the level of its upper border, and this level corresponds to the centre of the head of the femur.

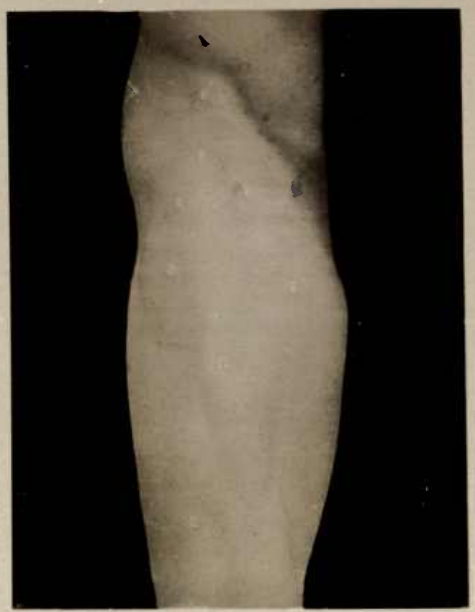
2. Muscles.—The sartorius runs downwards and inwards from the anterior superior spine, and is a valuable landmark. To its inner side is the depressed area corresponding to Scarpa's triangle, and to its outer side is a hollow, between the sartorius and the rectus femoris muscles. The lower part of the tensor fasciæ femoris forms a prominence outside this and rather lower down, and the rectus femoris becomes evident in the surface below this point, in the centre of the thigh, and to its outer side is the vastus externus still lower down.

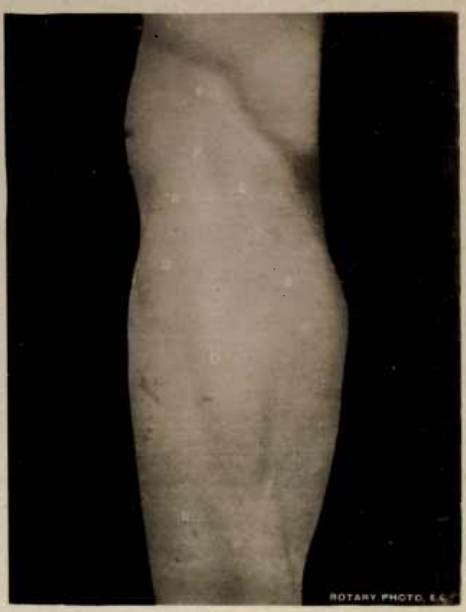
The adductor muscles in the inner side cannot be isolated from one another on the surface.

Vessels.—The figure 7 is placed on the femoral artery near the apex of Scarpa's triangle. The artery higher up lies midway between the anterior superior iliac spine and the pubic symphisis, and passes behind 7 in a line which, continued downwards, goes to the adductor tubercle of the femur.

The figures indicate—

1. Anterior superior spine.
2. Depression between sartorius and tensor fasciæ femoris.
3. Sartorius.
4. Rectus femoris.
5. Tensor fascia femoris, lower part.
6. Vastus externus.
7. On femoral artery.
8. Level of great trochanter (upper margin) and of head of femur.





LOWER LIMB.

SURFACE ANATOMY.—No. 2.

INNER SIDE OF THIGH.

The landmarks on this aspect are entirely muscular, as far down as to the region of the knee-joint: Here the **adductor tubercle** can be felt, between the sartorius and the vastus internus.

This tubercle gives the position of the lower epiphysial cartilage on the inner side.

The sartorius muscle forms an important landmark in nearly its whole length. In the upper part of the thigh it lies to the outer side of the femoral vessels, at the middle third of the thigh it crosses them and comes to their inner side. In this region it forms the roof for Hunter's canal.

The fleshy mass of the adductor muscles is very wide at the upper part, but narrows rapidly as it passes down the thigh. The individual muscles cannot be identified on the surface, but the tendon origin of the adductor longus can be felt at the upper part, and the insertion of the adductor magnus into the adductor tubercle.

With this view, Hunter's Canal, Nos. 1 and 2, should be examined.

The figures indicate—

1. Sartorius muscle, bounding Scarpa's triangle.
2. Adductor muscles.
3. Scarpa's triangle.
4. Hunter's canal, covered by the sartorius muscle.
5. Vastus internus muscle.

LOWER LIMB.

SURFACE ANATOMY.—No. 3.

FRONT OF RIGHT KNEE.

1. Bony points.—When the knee-joint is fully extended, the **patella** rises up in front of the lower end of the femur, and its lower border comes to be in line with the joint.

Above the patella is a depressed area, corresponding to the fibrous tendon of the quadriceps extensor muscle, rather of the shape of an inverted V. The point of the V passes between the fleshy prominences of the vastus externus and internus muscles, the vastus internus passing lower down than the externus.

The anterior tubercle of the tibia forms a distinct prominence in the middle of the front of the leg, below the ligamentum patellæ, and the external and internal tuberosities lie on each side of it but at a higher level.

The head of the fibula lies at the same level as the anterior tubercle, but is not seen, as it lies on the outer side towards the back.

The prominence of the biceps is seen on the outer side.

On the outer side of the knee is a flattened region, corresponding to the ilio-tibial band, passing down to the external tuberosity of the tibia.

On the inner side is a prominence, formed by the sartorius, adductor gracilis, and semitendinosus muscles, which passes downwards, outwards, and forwards. The muscles cannot be distinguished from one another.

Compare with this view, Knee Joint No. 1.

The figures indicate—

1. Vastus externus.
2. Vastus internus.
3. Centre of patella.
4. Tubercle of tibia.
5. Internal tubercle of tibia.
6. Tibialis anticus.
7. Inner head of gastrocnemius.

LOWER LIMB SURFACE ANATOMY. No. 3.

SECTION VII.

LOWER LIMB.

SURFACE ANATOMY—No. 4.

OUTER SIDE OF LEFT KNEE.

1. Bony points.—When the knee is half flexed, the patella forms a projection in front of the lower end of the femur. Behind it, the external condyle forms a projection below the skin.

The prominence on the front of the external condyle is due to the projection of the highest part of the trochlear surface, and this corresponds to the level of the epiphysial plate of cartilage on the outer side.

The external tuberosity of the tibia can very readily be made out when the limb is in this position, and just above it can be felt a depression, at the bottom of which lies the external semilunar cartilage.

The head of the fibula lies at the bottom of a depression rather to the back on the outer side. The shaft of the fibula can only be made out with difficulty, as it is covered by the peroneal muscles.

2. Muscles and tendons.—The tendon of the biceps stands out very distinctly, and there is a depression just above it, which is limited by the ilio-tibial band.

The tendon of the semitendinosus, lying on the fleshy semimembranosus, forms an almost equally distinct projection on the inner side of the hollow which corresponds to the popliteal space.

In the leg, the two heads of the gastrocnemius can be seen, with a groove between them, and adjoining the outer head is the prominence formed by the peroneus longus, while in front of that are the extensor longus digitorum and tibialis anticus muscles.

The figures indicate—

1. External condyle, front.
2. Patella.
3. External condyle, back part.
4. External tubercle of tibia.
5. Head of fibula.
6. Biceps.
7. Peroneus longus.
8. Gastrocnemius.

LOWER LIMB.

SURFACE ANATOMY.—No. 5.

OUTER SIDE OF FOOT AND ANKLE.

1. Bony points.—On the outer side of the foot, the base of the fifth metatarsal bone (2) projects below the skin. Immediately behind it lies the cuboid bone, and behind that again is the anterior end of the os calcis.

Upon the outer surface of the os calcis the peroneal tubercle (3) can usually be detected, and it is a guide to the peroneal tendons, the peroneus longus lying in a groove below it, and the peroneus brevis above it.

The external malleolus (1) forms a well-marked prominence, and descends for some distance below the level of the ankle-joint. It is lower than the internal malleolus, and lies on a more posterior plane.

2. Muscles and Tendons.—The extensor brevis digitorum (4) forms a rounded soft elevation on the outer side of the foot, covering the front of the os calcis.

Behind it, the finger can be passed into a depression, the sinus tarsi, between the os calcis and the astragalus.

The tendons of the tibialis anticus (5) and of the extensor longus digitorum (6) form well-marked projections in the front of the foot, and can be traced to their respective insertions.

The figures indicate—

1. External malleolus.
2. Base of fifth metatarsal.
3. Peroneal tubercle.
4. Extensor brevis digitorum.
5. Tibialis anticus.
6. Extensor longus digitorum.

LOWER LIMB SURFACE ANATOMY. No. 5.
SECTION VII.

LOWER LIMB.

SCARPA'S TRIANGLE—No. 1.

THE SKIN, LAYERS OF FASCIA, CUTANEOUS NERVES AND VESSELS, ETC., WHICH FORM THE ROOF OF THE SPACE, HAVE BEEN REMOVED, TO SHOW THE BOUNDARIES AND CONTENTS OF THE TRIANGLE.

SCARPA'S TRIANGLE is a triangular space situated in the upper part of the front of the thigh.

It is bounded above by Poupart's ligament, externally by the sartorius, and internally by the inner margin of the adductor longus muscles.

POUPART'S LIGAMENT is a strong fibrous band extending from the anterior superior spine of the ilium to the spine of the pubis. At the inner end some fibres pass backwards and outwards and gain an attachment to the ilio-pectineal line. This portion is known as Gimbernat's ligament.

The SARTORIUS arises from the anterior superior spine of the ilium, and from the notch below it, and consists of parallel fleshy fibres which form a long, strap-like muscle, which passes obliquely across the front of the thigh, and the ADDUCTOR LONGUS takes origin by a rounded tendon from the front of the pubis, in the angle between the crest and symphisis, from which the fleshy fibres diverge in a fan-shaped manner, to an insertion into the inner lip of the linea aspera.

Within the space are found the femoral artery and vein and the anterior crural nerve, with branches derived from them, the termination of the long saphenous vein, the crural branch of the genito-crural nerve, and some deep femoral lymphatic glands, together with areolar and fatty tissue.

On the inner side of the femoral vein is the femoral or crural ring, through which a femoral hernia may occur. It is a narrow space bounded by Poupart's ligament in front, by the fascia of the pectineus muscle and the pubic bone behind, by Gimbernat's ligament internally, and by the femoral vein externally, from which it is separated by a thin septum. It is filled by some fatty tissue and a lymphatic gland.

The roof of Scarpa's triangle is seen in the views of the Inguinal Region (Section 2).

The figures indicate—

1. Femoral artery.
2. Femoral vein.
3. Bifurcation of the femoral artery, and branches of anterior crural nerve.
4. Deep external pudic vessels.
5. Cutaneous branches from anterior crural nerve.
6. Poupart's ligament.
7. Iliacus muscle.
8. Pectineus muscle.
9. Sartorius muscle.
10. Adductor longus muscle.
11. Rectus femoris muscle.
12. Ilio-tibial band.

LOWER LIMB—SCARPA'S TRIANGLE. No. 1

SECTION VII.

LOWER LIMB.

SCARPA'S TRIANGLE.—No. 2.

THE FEMORAL VESSELS AND THEIR BRANCHES HAVE BEEN DIVIDED, AND POUPART'S LIGAMENT HAS BEEN REMOVED.

The floor of Scarpa's triangle is formed of two planes inclined to one another, with a deep groove at their junction. The outer plane is formed by the iliacus and psoas muscles covered by the iliac fascia, and the inner by the pectineus and adductor longus muscles covered by the pubic fascia.

The space is therefore prismatic in form, the apex of the prism being formed by the junction of these two planes.

The **anterior crural nerve** lies in the interval between the psoas and iliacus muscles, while the femoral vessels lie on the psoas and pectineus.

The **internal circumflex vessels** escape from the triangle by passing between the psoas and pectineus muscles.

The **pectineus** is a quadrilateral sheet of muscle which arises from the ilio-pectineal line between the spine of the pubis and the ilio-pectineal eminence, from the bone in front of this line, and from the deep surface of the pubic fascia, close to its attachment to the ilio-pectineal line. When the muscles are small it does not come into contact with the adductor longus, and a small portion of the adductor brevis can then be seen from the front.

The nerve supply to the pectineus is seen to be a small branch from the anterior crural nerve which passes inwards behind the femoral vessels.

The root of the penis divided is seen to the right.

The figures indicate—

1. Sartorius muscle.
2. Adductor longus muscle.
3. Adductor gracilis muscle.
4. Pectineus muscle.
5. Rectus femoris muscle.
6. Iliacus muscle.
7. Psoas muscle.
8. Tensor fasciæ femoris muscle.
9. Attachments of Poupart's ligament.
10. Genito-crural nerve lying on psoas muscle.
11. Anterior crural nerve.
12. Internal circumflex artery.
13. Femoral vessels.
14. Profunda femoris artery.

LOWER-LIMB-SCARPA'S TRIANGLE. No. 2

SECTION VII.

LOWER LIMB.

SCARPA'S TRIANGLE.—No. 3.

THE SARTORIUS MUSCLE HAS BEEN DIVIDED NEAR ITS ORIGIN AND REMOVED TO SHOW THE ARRANGEMENT OF THE STRUCTURES WITHIN THE SPACE.

The FEMORAL ARTERY begins at Poupart's ligament as the direct continuation of the external iliac artery. For a distance of about two inches it is known as the common femoral, but it then divides into two branches, one. the direct continuation, is known as the superficial femoral, while the other branch, passing deeply, is called the profunda femoris.

The common femoral is superficially placed, being covered only by the roof of the triangle, and by some of the contents, and it rests upon the muscles forming the floor, *i.e.* upon the psoas and pectineus, while lower down, the superficial femoral lies upon the adductor longus.

The femoral vein lies at first along the inner side, but comes to lie behind the superficial femoral artery, and the anterior crural nerve lies to the outer side. The branches of this nerve pass in different relations to the artery, the nerve to the pectineus passes behind it, the internal cutaneous nerve crosses in front of it, and the long saphenous nerve and the nerve to the vastus internus lie along its outer side.

Branches.—The superficial inguinal branches have been previously seen, and the deep external pudic runs across the pectineus and adductor longus muscles to the external genitals.

The course of the profunda femoris and its branches is seen in another view, and also the branches given off by the superficial femoral in Hunter's canal.

The figures indicate—

1. Sartorius muscle, divided.
2. Iliacus muscle.
3. Pectineus muscle.
4. Adductor longus muscle.
5. Rectus femoris muscle.
6. Tensor fasciæ femoris muscle.
7. Anterior crural nerve.
8. Middle cutaneous nerve, turned aside.
9. Muscular branches to vastus externus and crureus from anterior crural.
10. Long saphenous nerve.
11. Nerve to vastus internus.
12. Internal cutaneous nerve.
13. Femoral vein.
14. Femoral artery.
15. Poupart's ligament.

LOWER LIMB—SCARPA'S TRIANGLE. No. 3

SECTION VII.

LOWER LIMB.

HUNTER'S CANAL.—No. 1.

SKIN AND FASCIÆ HAVE BEEN REMOVED FROM THE FRONT AND INNER PART OF THE THIGH, TO SHOW THE MUSCLES AND NERVES.

The **sartorius** muscle passes obliquely downwards and inwards across the lower part of the thigh to its insertion into the upper part of the inner surface of the shaft of the tibia. It crosses the rectus femoris, vastus internus, adductor longus and magnus, and comes to lie in contact with the adductor gracilis, and conceals from view the femoral vessels lying in Hunter's canal.

This muscle is the most important and useful landmark of the front of the thigh, especially with reference to the femoral vessels.

Cutaneous nerves are seen in relation to its surface, the patellar branch of the long saphenous piercing it, and a branch from the internal cutaneous nerve joined by a branch from the anterior division of the obturator nerve running down on its surface.

In the interval between the vastus internus and sartorius is found the rounded tendon of the adductor magnus, and, in front of it, the long saphenous nerve and a branch of the anastomotica magna artery. This region is of importance surgically as being the place usually selected for osteotomy of the femur.

The figures indicate—

1. Rectus femoris muscle.
2. Vastus internus muscle.
3. Sartorius muscle.
4. Adductor longus muscle.
5. Adductor gracilis muscle.
6. Adductor magnus muscle and tendon.
7. Cutaneous branch of obturator nerve.
8. Patellar branch of long saphenous.
9. Long saphenous nerve, and branch of anastomotica magna artery.
10. Internal cutaneous nerve.

LOWER LIMB—HUNTER'S CANAL. No. 1.

SECTION VII.

LOWER LIMB.

HUNTER'S CANAL—No. 2.

In addition to the previous dissection, the sartorius has been divided, and its lower part removed, and the fascia which covers the femoral vessels has been removed also

Hunter's canal is the name given to the tubular passage in which the femoral vessels pass in their course from the apex of Scarpa's triangle to the opening in the adductor magnus. It lies nearly in the middle third of the thigh, and it is bounded externally by the vastus internus muscle, behind by the adductor longus and magnus, and it is covered by the sartorius. A strong band of fibrous tissue stretches across the canal under the sartorius. Within the canal are found the femoral vessels, in relation to one another as seen, the artery lying in front of the vein, and at the lower part rather to its inner side, and with them is the long saphenous nerve and the origin of the anastomotica magna artery.

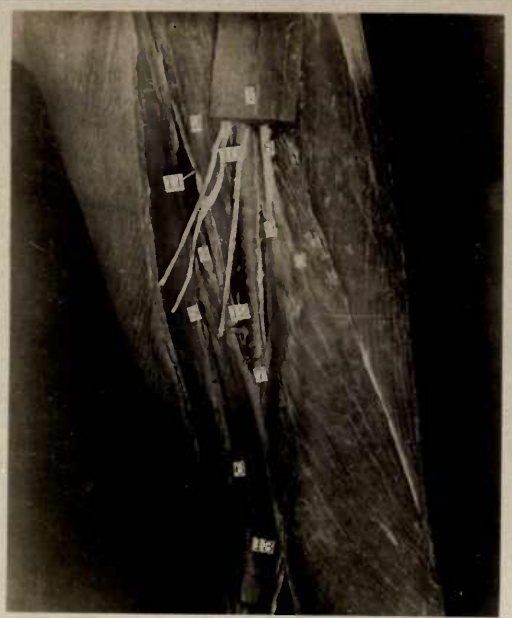
The **long saphenous nerve** lies on the outer side of the artery, but at the lower part it passes in front of the tendon of the adductor magnus, accompanied by a branch of the anastomotica magna branch of the femoral artery, and escapes from the canal in this way.

The **internal cutaneous nerve** is seen crossing the artery in several branches. It is joined by a branch of the obturator nerve, which then runs on and is distributed to the wall of the femoral artery.

When ligaturing the femoral artery here, the superficial structures are divided, the sartorius muscle pulled outwards, and the fascia under it divided.

The figures indicate—

1. Sartorius muscle divided.
2. Adductor longus muscle.
3. Vastus internus muscle.
4. Adductor magnus muscle.
5. Adductor gracilis muscle.
6. Semimembranosus muscle.
7. Aponeurotic roof, divided.
8. Nerve to vastus internus.
9. Long saphenous nerve on femoral artery.
10. Internal cutaneous nerve.
11. Branch from obturator nerve.
12. Femoral vein.
13. Long saphenous nerve and branch of anastomotica magna artery.



LOWER LIMB.

DEEP DISSECTION OF THIGH—No. 1.

THE SUPERFICIAL STRUCTURES HAVE BEEN REMOVED, AND THE ADDUCTOR LONGUS, SARTORIUS AND RECTUS FEMORIS MUSCLES HAVE BEEN DIVIDED NEAR THEIR ORIGIN AND REMOVED.

The **anterior crural nerve** arises within the abdomen from the posterior branches of the anterior primary divisions of the 2nd, 3rd and 4th lumbar nerves. It enters the thigh by passing behind Poupart's ligament in the interval between the iliacus and psoas muscles, and rapidly breaks up into branches. These are divided into a superficial and a deep set, and the external circumflex artery passes out between them.

The **superficial set** consists of (1) muscular branches to the sartorius and pectineus muscles, the former passing directly to the muscle, and the latter passing inwards behind the femoral vessels, and (2) of the middle and internal cutaneous nerves. The latter nerve is seen passing inwards in front of the femoral artery in two branches. From the **deep division**, muscular branches are given to all the parts of the quadriceps extensor muscle, and a cutaneous branch, the long saphenous nerve, is seen passing downwards in company with the femoral artery, and entering Hunter's canal.

An articular branch is usually given to the hip joint, and some of the muscular branches pass to the knee.

The **external circumflex artery** is seen passing outwards from the profunda femoris artery under the sartorius and rectus femoris muscles.

On the inner side of the thigh, behind the adductor longus, muscular branches from the profunda femoris artery are found, with muscular branches from the anterior division of the obturator nerve, supplying the adductors longus, brevis and gracilis.

The figures indicate—

1. Sartorius muscle, divided.
2. Iliacus muscle.
3. Pectineus muscle.
4. Adductor longus muscle.
5. Rectus femoris muscle
6. Tensor fasciæ femoris muscle.
7. Adductor brevis muscle.
8. Adductor gracilis muscle.
9. Adductor magnus muscle.
10. Trunk of anterior crural nerve.
11. Branches of anterior crural nerve, and level of bifurcation of common femoral artery.
12. Long saphenous nerve and nerve to vastus internus muscle.
13. Nerve to vastus externus.
14. External circumflex artery.
15. Muscular branch of profunda femoris to adductor magnus muscle.
16. Branches of anterior division of obturator nerve.
17. Internal cutaneous nerve.
18. Femoral vein.
19. Poupart's ligament.

LOWER LIMB.

DEEP DISSECTION OF THIGH.—No. 2.

In addition to the former dissection, the pectineus muscle has been divided and removed, and the superficial femoral vessels divided close to their upper end and removed, to show the profunda femoris vessels. The vein has been divided about 1½ inches lower than the artery.

The **profunda femoris** arises from the outer back part of the femoral artery, and after a short course outwards, passes inwards behind the femoral vessels, resting successively upon the iliacus, pectineus, adductor brevis, and adductor magnus muscles.

In this view, muscular branches are seen going to the adductor muscles, and it also gives off circumflex and perforating branches.

Behind the pectineus, the anterior division of the obturator nerve is seen emerging from the thyroid foramen over the obturator externus muscle.

On the outer side of the thigh is seen the fascial investment which clothes the tensor fasciæ femoris muscle. The layer upon the deep surface of that muscle passes deeply inwards to join the capsule of the hip-joint.

The figures indicate—

1. Sartorius muscle divided.
2. Iliacus muscle.
3. Pectineus muscle divided.
4. Adductor longus muscle.
5. Adductor brevis muscle.
6. Adductor gracilis muscle.
7. Adductor magnus muscle.
8. Obturator externus muscle.
9. Rectus femoris muscle.
10. Tensor fasciæ femoris.
11. Fascia on deep aspect of tensor fasciæ femoris.
12. Points to crural canal.
13. Poupart's ligament.
14. Femoral artery divided.
15. Profunda femoris vessels.
16. Muscular branches of anterior crural nerve.

LOWER LIMB—DEEP DISSECTION OF THIGH. No. 2. SECTION VII.

LOWER LIMB.

DEEP DISSECTION OF THIGH.—No. 3.

In addition to the dissection described in Scarpa's triangle, No. 2, the iliacus and sartorius muscles have been divided, and portions removed.

The **tensor fasciæ femoris** muscle arises from the outer lip of the crest of the ilium, the notch below the anterior superior spine, and from the fascia covering the muscle, and is inserted into the fascia lata.

The **rectus femoris** arises by two heads, a straight head, attached to the anterior inferior spine of the ilium, and a reflected head, not seen, attached to the dorsum of the ilium above the acetabulum.

These muscles constitute important guides in cutting down upon the hip joint from the front.

Behind the iliacus is seen the front of the capsule of the hip-joint, and upon it is a smooth surface forming the back wall of a bursa, which occasionally communicates with the joint cavity.

The fibrous tissue forms a prominent vertical band between the iliacus and psoas.

The relations of the superficial femoral vessels and the profunda femoris should be noticed—the profunda artery lies on the outer side of the femoral vein in this part of its course, while the profunda vein joins the femoral vein lower down, where that vein is lying behind its corresponding artery.

The nerve to the pectineus muscle is seen in close relation to the internal circumflex artery.

The figures indicate—

1. Sartorius muscle.
2. Iliacus muscle.
3. Psoas muscle.
4. Rectus femoris muscle, straight head.
5. Tensor fasciæ femoris muscle.
6. Pectineus muscle.
7. Adductor longus muscle.
8. Bursa in front of capsule of hip-joint.
9. External iliac artery and genito-crural nerve.
10. Femoral vein, lying behind femoral artery.
11. Profunda femoris artery and branches of anterior crural nerve to vastus internus.

LOWER LIMB—DEEP DISSECTION OF THIGH. No. 3.
SECTION VII.

LOWER LIMB.

DEEP DISSECTION OF THIGH.—No. 4.

The pectineus and psoas muscles have been reflected, in addition to the dissection in No. 3, and an additional inch of the femoral vessels has been removed.

The **capsule of the hip-joint** is closely invested by numerous powerful muscles.

On the **outer side** are the gluteus minimus and gluteus medius, **in front** the rectus femoris, iliacus, and psoas, in that order from without inwards. Further to the inner side is the pectineus, and behind it the adductor magnus, with the obturator externus winding round below the capsule.

These relations are of great importance in connection with the spread of abscesses from the hip-joint.

The **internal circumflex artery,** having passed between the psoas and pectineus, continues its course backwards between the adductor magnus and obturator externus, giving branches to these muscles.

The **obturator nerve** is seen running on the surface of the adductor magnus, but only a small portion of the adductor brevis is seen, at the upper border of the adductor longus.

A further relationship of the superficial femoral and profunda femoris vessels should be noticed.

The nerve to the tensor fasciæ femoris is seen just above and outside 2.

The figures indicate—

1. Gluteus medius muscle.
2. Gluteus minimus.
3. Tensor fasciæ femoris muscle.
4. Rectus femoris muscle.
5. Ilio-psoas muscle.
6. Vastus externus muscle.
7. Pectineus muscle.
8. Adductor longus muscle.
9. Adductor gracilis muscle.
10. Adductor magnus muscle.
11. Obturator externus muscle.
12. Obturator nerve.
13. Bursa in front of capsule of hip joint.
14. Femoral vessels.
15. Profunda femoris vessels.

LOWER LIMB DEEP DISSECTION OF THIGH. No. 4.

SECTION VII.